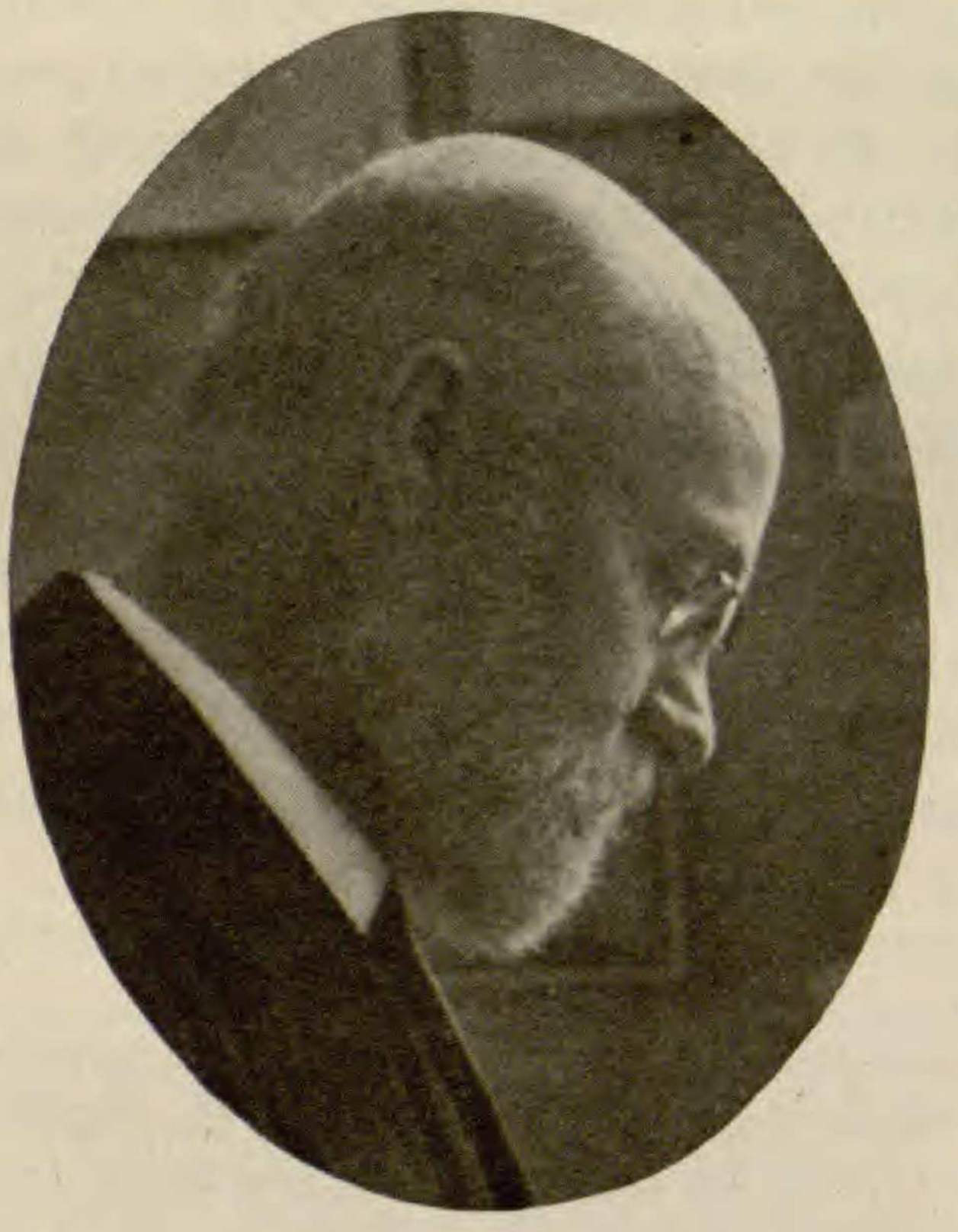
BRIEFER ARTICLES

ALFRED GABRIEL NATHORST

(WITH PORTRAIT)

ALFRED GABRIEL NATHORST was born on November 7, 1850, and died at Stockholm on Januray 20, 1921. Three years before his death, having reached the age limit of active service, he retired from the directorship of the Paleobotanical Museum of the Swedish Academy, a post which he had held for many years to the great benefit of his favorite science. In 1917 he wrote, "I am growing old and my health has been much weakened in consequence of a disease of the heart for the last one and a-half years"; again in October, 1919, "I have not been able to work seriously since 1916, but now I hope to have regained so much of my strength that I may complete an additional work on the Lower Carboniferous at Spitzbergen." This hope was fulfilled, and in 1920 was published the last of a remarkable series of memoirs on Arctic floras.



NATHORST'S contributions to knowledge cover a period of fifty-one years. His first paper, on Cambrian rocks of Scania, was published in 1869. The range of subjects is exceptionally wide, and everything he touched he illuminated.

A few years before his death, NATHORST had the satisfaction of seeing his beloved collections installed in a new and worthier home outside the city, under the guardianship of his former pupil and assistant, Dr. HALLE, to whose able hands he was well content to intrust the reputation of the museum as a center of paleobotanical research. In

1905 NATHORST visited several scientific institutions in England and on the continent, in company with a Swedish architect, for the purpose of obtaining information in preparation for the new building, toward the erection of which parliament subsequently voted £140,000. Three years later he wrote, "I am happy to have founded this museum for the sake of paleobotany and my successors."

It was my good fortune on two occasions to spend several days in the old museum with NATHORST, and it will always be the small and crowded rooms in the heart of Stockholm that some of us will remember with feelings of admiration, gratitude, and affection. The accompanying photograph, taken by my colleague W. HANISHAW THOMAS, and regarded by NATHORST as the best of his portraits, shows the director at work in his private room. Other museums may be larger and more imposing, but none contain as many treasures or form a more impressive monument to the life-long devotion of a conscientious and whole-hearted student of nature.

NATHORST was universally regarded as a master in paleobotany; a geologist of the first rank; an Arctic explorer whose extended geological and geographical researches in Spitzbergen, Bear Island, King Charles Land, Ellesmere Land, and other regions in the course of several expeditions, notably that of 1898–1899 of which he was the scientific leader, were fruitful in results of the greatest importance; and an expert systematic botanist. He was an exceptionally all-round naturalist, in whom were happily combined sound learning, breadth of view, and a natural modesty. Although seriously handicapped by his almost complete deafness, he was intensely happy in his work. He spoke English and German with surprising fluency and correctness, and wrote in both these languages and in French. In one of his letters he said, "It is easier for me to write in German than in English, but I think it would have been better if I had published my papers in English, as paleobotany is now (1908) chiefly and with best results studied in England and America."

In 1872, at the age of twenty-one, he paid his first visit to England, when he met Sir CHARLES LYELL, whose *Principles of Geology* awakened his love for that science. In 1907 he came as a delegate to the centenary of the Geological Society of London, and in 1909 to the Darwin Celebrations at Cambridge, a visit which he thoroughly enjoyed in company with Professor ZEILLER of Paris, of whom he afterward spoke as "our dear, noble, and lamented friend." NATHORST never visited the United States. In 1914 he wrote, "I really should like to study

the flora of eastern North America in connection with the Tertiary flora of Spitzbergen." He was deeply interested in Dr. WIELAND'S work on the fossil Cycads, for which he had a great regard, although he did not approve of the application of the term Cycad to the fossil stems which he maintained differed too widely in the fertile shoots from the Cycadales to be placed in that group. NATHORST'S own works on the Cycadophyta (a class designation which he instituted) not only added greatly to our knowledge of the extinct types, but stimulated other workers in the same field.

It is impossible in a short article to give an adequate idea of NATHORST'S contributions to paleobotany. Among his better known researches are those on Arctic floras from Devonian to Tertiary, his series of *Paleobotanische Mitteilungen* in which many new types, notably Devonian and Rhaetic genera, are described, his thorough study of the Rhaetic and Liassic floras of Scania, the series of papers on supposed fossil algae which were revolutionary and had a far reaching and salutary influence, his work on the distribution of Arctic plants during the Glacial period inspired by his first-hand knowledge of recent Arctic plants, his numerous contributions to our knowledge of Mesozoic floras in widely separated parts of the world, from Graham Land and the Falkland Islands to the new Liberian Islands, and his stimulating papers on British fossil plants. Although he did not concern himself with the investigation of petrifactions, his skilful use of improved methods which he invented for examining the mummified cuticles of impressions led to astonishing results.

NATHORST had the true scientific spirit. His work was based on a firm foundation of accurate and wide knowledge of botany and geology; he recognized the limitations of his material and never ventured to deal with matters on which he was not competent to speak with the authority of a specialist. In 1895 he wrote in one of a long succession of most helpful letters, "The chief rule in dealing with fossil plants is that one ought to say precisely as much as the material allows, neither more nor less. This is the ideal, but one cannot help sometimes saying a little too much in consequence of what one besides (that is, beyond the available evidence) does believe!" He strongly deprecated the over-confidence of some paleobotanists and their departure from a wholesome skepticism. In 1919 he wrote in a letter, "The longer I live, the more my skepticismus is developed, although my projected great work on *Skepticism in paleobotany* in twelve volumes will probably never appear!" He took a delight in helping others with kindly encourage-

ment and frank criticism. For him, purely destructive criticism had no charm; he always took pains to be stimulating and constructive. His sincerity and generosity inspired confidence and affection. He had a keen sense of humor, and with a boyish sense of fun he combined the mature judgment and cautious outlook of a philosopher. He loved to write and talk of his work: "You can hardly imagine how isolated I am here. My correspondence with friends and fellow-workers has been a great source of joy and satisfaction."

It was a privilege to know NATHORST. His achievements won for him a preeminent position among his colleagues, but one thinks of him, now that he has gone, not so much as the stimulating teacher that he unquestionably was, but more especially as a very human friend, the memory of whose generous spirit and affectionate regard is a precious possession.—A. C. SEWARD, *Cambridge, England.*